

REMARKS

Applicant wishes to thank the Examiner for considering the present application. In the Office Action dated September 22, 2005, Claims 1-8, 11, 12, 15-18, and 21-31 are pending in the application. Applicant respectfully requests the Examiner for reconsideration.

Claim 23 stands objected to for being dependent upon itself. Applicant has amended Claim 23 to be dependent from Claim 18 and thus this rejection is believed to be overcome.

Claims 1, 3-5, 11-12, and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* (6,173,179) in view of *Green* (5,073,930). Applicant respectfully traverses.

Claim 1 includes a reconfigurable satellite having a programmable frequency synthesizer coupled to an up converter and a down converter of a communications control circuit and a routing table storing tuning information therein. A controller controls the frequency reconfiguration of the communication control circuit through the programmable frequency synthesizer in response to the tuning information.

The *Hammill* reference is cited for having a routing table on page 2 of the Office Action. The Examiner points to the routing tables 1-2 illustrated in the text of the patent. Applicant respectfully submits that the tables cited by the Examiner show a beam and size, but tuning information such as frequencies are not illustrated. It is clear that the tuning information of the present application is used to tune the frequency through the controller. That is, the controller of Claim 1 controls "a frequency reconfiguration of the communication control circuit through the programmable frequency synthesizer." No frequency reconfigurations of beams is set forth. In Col. 4, lines 20-25, state, "A phased array antenna may also be used to generate the beams, and also provides the ability to reconfigure the antenna on the fly to transmit beams of varying sizes." While the size of the beams may be changed, no teaching or suggestion is provided for changing the frequency of the beams in response to a programmable frequency synthesizer and a

routing table. In fact, Applicant agrees with the Examiner that a programmable frequency synthesizer is not illustrated in the *Hammill* reference. This is not surprising since the frequency of the beams appears not to change.

The *Green* reference is cited for teaching a programmable frequency synthesizer coupled to an up converter and a down converter. While it is true that two voltage control oscillators 222, 244, and phase lock loop chips 226, 248 are illustrated coupled to a respective down converter and up converter, there is no teaching or suggestion that the phase lock loop chip changes the voltage control oscillator in response to a routing table. In fact, the single chip microcomputer 206 is used to change the frequency as is set forth in Col. 13, lines 27-33. There is no mention of a routing table in this reference as well.

With respect to independent Claim 15, a reconfiguration circuit is set forth that includes a programmable frequency synthesizer coupled to the up converter and down converter and a routing table having tuning information therein. Because of the inclusion of these elements, Claim 15 is also believed to be allowable for the same reasons set forth above.

Claim 28 is a method claim that recites "storing frequency tuning information in a routing table" and "reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table by changing an up converter frequency and down converter frequency using a programmable frequency synthesizer." Thus, Claim 28 is similar to Claims 1 and 15 in that the reconfiguration is performed in response to the tuning information in the routing table. Therefore, Claim 28 is also believed to be allowable for the same reasons set forth above.

Claims 3-5 and 11-12 are also believed to be allowable for the same reasons set forth above.

Likewise, claims 3-5 are believed to be allowable for the same reasons set forth above.

Claim 15 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Wolcott* (6,317,583) and in further view of *Green* '930.

Claim 15 is an independent claim and recites "A payload circuit for a satellite comprising: a receive array; a receive beam forming network; a transmit array;

a transmit beam forming network; a communications control circuit for controlling communications of said satellite, said communications control circuit being an up converter and a down converter; and a reconfiguration circuit coupled to the communications control circuit for reconfiguring the communications control circuit, said reconfiguration circuit comprising a programmable frequency synthesizer coupled to the up converter and down converter, an on-board computer and a routing table having tuning information stored therein, said on-board computer controlling a reconfiguration of said communications control circuit through said programmable frequency synthesizer in response to said tuning information." The *Wolcott* reference is similar to Claim 1 in that the reconfiguration circuit comprises a programmable frequency synthesizer coupled to the up converter and down converter and a routing table having tuning information therein. The onboard computer controls the reconfiguration of the communications control circuit through the programmable frequency synthesizer in response to the tuning information. The *Wolcott* reference also does not teach or suggest these missing elements. Therefore, Claim 15 is also believed to be allowable over the combination of the *Hammill*, *Wolcott* and *Green* references.

Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Green* in further view of *Wiswell* (6,205,319).

The *Wiswell* reference also does not teach or suggest the missing limitations of Claim 1. Applicant therefore respectfully requests the Examiner to reconsider the rejection of Claim 2.

Claims 6-7 and 16-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Green* as applied to Claims 1 and 15 above, in further view of *Brown* (6,157,621).

Claims 6 and 7 depend from Claim 1 and Claims 16-17 depend from Claim 15. The *Brown* reference also does not teach or suggest the elements missing from Claims 1 and 15. Applicant therefore respectfully requests the Examiner to reconsider this rejection as well.

Claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Green* as applied to Claim 1 above, in further view of *Galvin* (6,182,927).

Claim 8 depends from Claim 1. The *Galvin* reference does not teach or suggest the elements missing from the *Hammill* and *Wolcott* references. Applicant therefore respectfully requests the Examiner to reconsider the rejection of Claim 8.

Claim 18-20 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Pizzicaroli* (5,813,634) in further view of *Green*.

The *Pizzicaroli* reference also does not teach or suggest reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information or routing table by changing an up converter and a down converter frequency using a reprogrammable frequency synthesizer. Applicant therefore respectfully requests the Examiner to reconsider this rejection as well.

Claims 21-27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Pizzicaroli*, *Green* as applied to Claim 18 above, in further view of *Brown*.

As mentioned above, the *Pizzicaroli*, *Green*, *Hammill* and *Brown* references do not teach or suggestion elements missing from Claim 18 described above. Applicant therefore respectfully requests the Examiner for a reconsideration of these claims as well.

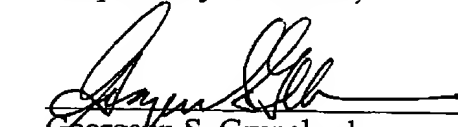
Claims 29-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hammill* in view of *Green* as applied to Claim 28 above, in further view of *Brown*.

As mentioned above, the *Hammill*, *Green* and *Brown* combination fails to teach reconfiguring the frequency reconfiguration of the payload of the reconfigurable satellite in response to the tuning information in the routing table by changing an up converter

frequency and a down converter frequency using a programmable frequency synthesizer. Applicant therefore respectfully requests the Examiner to reconsider the rejection of Claims 29-31.

In light of the above amendments and remarks, Applicant submits that all objections and rejections are now overcome. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments which would place the application in better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,


Georgann S. Grunebach
Reg. No. 33,179
Attorney for Applicant

Date: December 12, 2005

The DIRECTV Group, Inc.
RE/R11/A109
2250 E. Imperial Highway
P. O. Box 956
El Segundo, CA 90245-0956

Telephone: (310) 964-4615